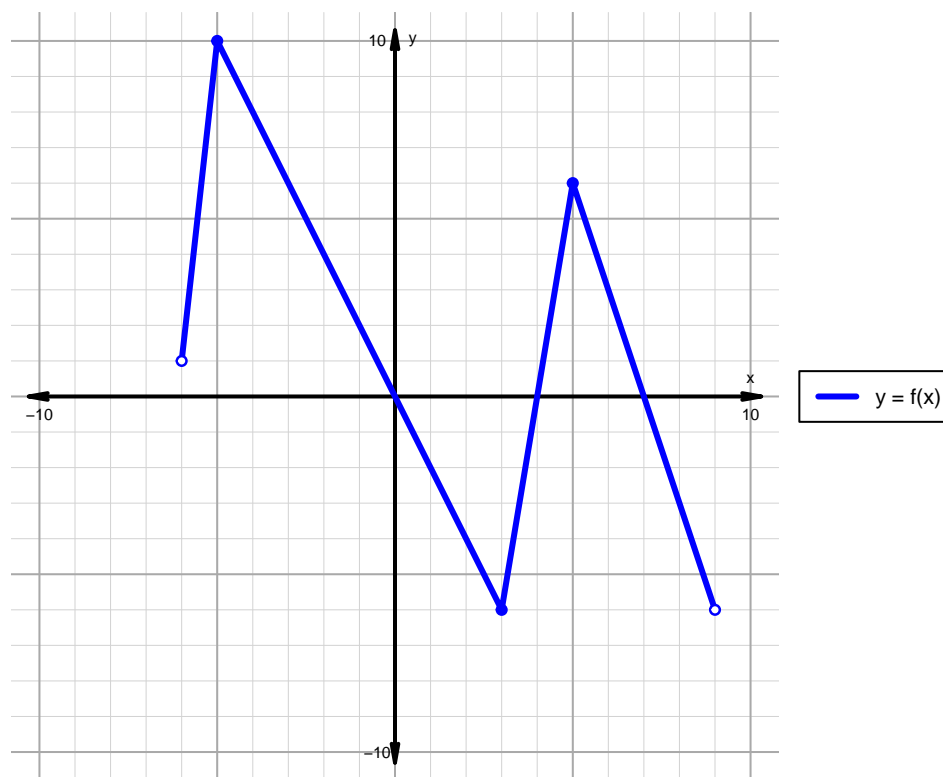


Name: \_\_\_\_\_

Date: \_\_\_\_\_

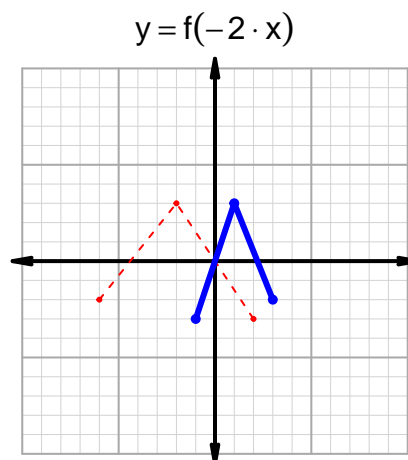
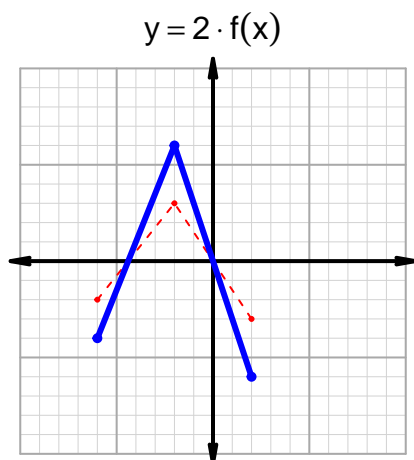
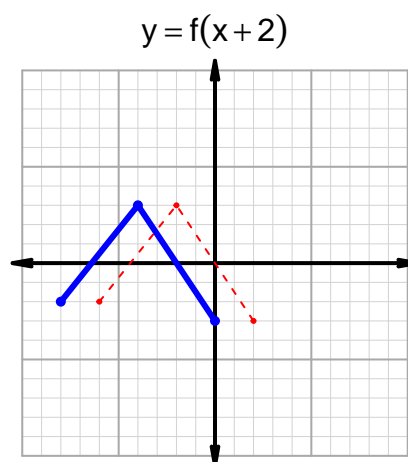
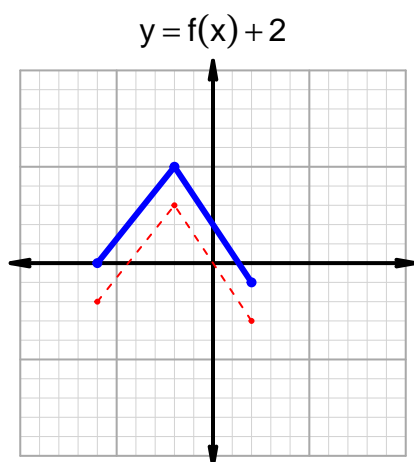
**Intervals, Transformations, and Slope Solution (version 8)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-6, 0) \cup (4, 7)$
Negative	$(0, 4) \cup (7, 9)$
Increasing	$(-6, -5) \cup (3, 5)$
Decreasing	$(-5, 3) \cup (5, 9)$
Domain	$(-6, 9)$
Range	$(-6, 10)$

## Intervals, Transformations, and Slope Solution (version 8)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 47$  and  $x_2 = 87$ . Express your answer as a reduced fraction.

$x$	$g(x)$
47	73
73	87
78	47
87	78

$$\frac{f(87) - f(47)}{87 - 47} = \frac{78 - 73}{87 - 47} = \frac{5}{40}$$

The greatest common factor of 5 and 40 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{1}{8}$$